

CALIFORNIA STATE UNIVERSITY STANISLAUS
Department of Biological Sciences, Fall 2011

**Course: Biology 1010: Principles of Biology ♦ Lecture Room
N101 ♦ Office Hours: 11:00-12:00**

**Instructor: Plelaji Kyauka, Ph.D. ♦ Office N252, Tel. 664 3838 ♦
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Course description

Principles of Biology (BIOL 1010) is an introduction to the basic concepts of biology with a focus on cellular and molecular biology, the principles of genetics, evolution and ecology. The first part of the course covers life's basic chemistry, biochemistry or the composition of living organisms, cell structure and function, metabolism, photosynthesis, and chemical energy. Part two explores DNA structure and function, protein synthesis, gene control, mitosis, meiosis and sexual reproduction, patterns of inheritance, human inheritance, and biotechnology. Part three examines evidence of evolution, processes of evolution, origin of life, and early evolution. Part four focus is on population ecology, community ecology, ecosystems, the biosphere, and human effects on the biosphere.

Course Requirements

1. **Textbook:** Biology: Concepts and Applications, 8th Edition, Cecie Starr, Christine A. Evers, and Lisa Starr.
2. **Passing Grade:** On-time regular attendance, note taking and participation are highly recommended. Avoid conversations, texting, web-surfing, or other disruptive behaviors during lectures including arriving late or leaving early. Students are expected to demonstrate a high level of competence in order to receive a passing grade in this course.
3. **Student Assessment:** Critical thinking and content knowledge will be assessed based on three midterm tests (100 points each), a comprehensive final test (150 points), and classroom quizzes or assignments (50 points). The instructor reserves the right to give unannounced quizzes and classroom assignments during lectures. Students must take the midterm tests on the days and times scheduled. **No make-up Midterm Tests, Final Examination or Classroom assignments or Quizzes will be given.** If you have a compelling reason for not taking a test, you are advised to provide a **written documentation** and schedule consultation with the instructor for consideration.
4. **Grading:** Your Final grade for this course will be based on the sum total of all points scored on midterms, quizzes, classroom assignments and Final Test. The letter grades will be assigned as follows: The letter grades will be assigned as follows: **A = or > 475, A- = or > 450, B+ = or >425, B = or > 400, B- = or > 385, C+ = or >370, C = or > 350, C- = or > 335, D+ = or > 320, D = or > 300, D- = or > 250, F < 250.** There will be no extra credit work.
5. **Textbook readings:** Read the assigned readings before the lectures. Each assigned reading will give you the lecture's background information but cannot replace the lecture. Thus, the textbook reading assignments are supplemental resources only. University instructors are not required to repeat what is in the textbook. At times they may disagree with the textbook content, correct the textbook content, or present new and current information about the lecture topic that contradict the textbook content.
6. **Tests, Classroom quizzes and Assignments:** Many of the test questions will be based on the material presented in the lectures, but some will focus on the textbook assigned readings and critical thinking.
7. **Audio and/or recording or cameras use:** Unless registered with the University Disability Resource Services and approved, the use of audio and/or recording or cameras is not permitted during lectures, and electronic publication or distribution of the lecture notes requires the instructor's written approval.
8. **Missed Lectures:** Should you miss a lecture, it is your responsibility to obtain and learn all the lecture material missed from **students** who attended the lecture.
9. **Study Guides:** All lecture materials and assigned readings are important, and will be tested. No special test guides will be provided. Your lecture notes and reading notes are the best test study guides.
10. **Cell Phones:** Cell phones must be turned off and out of sight during lectures, tests or quizzes.

Course drop and Withdraw

The course requirements for course drop, and withdraw, read the University Requirements.

Academic Honesty and Student Discipline

In addition to an automatic **F** grade for the course, cheating and/or plagiarism is subject to the university discipline procedures including expulsion, suspension, and probation.

TENTATIVE LECTURE AND READING ASSIGNMENT SCHEDULE

Chapter 1: Biology: Introduction, pg. 3

PRINCIPLES OF CELLULAR LIFE

Chapter 2: Life's Chemical Basis, pg. 23

Chapter 3: Molecules of Life, pg. 37

Chapter 4: Cell Structure, pg. 51

Chapter 5: Metabolism, pg. 75

Chapter 6: Photosynthesis, pg. 93

Chapter 7: Chemical Energy, pg. 107

GENETICS

Chapter 8: DNA Structure and Function, pg. 123

Chapter 9: DNA and Proteins, pg. 137

Chapter 10: Controls over Genes, pg. 151

Chapter 11: How Cells Reproduce, pg. 163

Chapter 12: Meiosis and Sexual Reproduction, pg. 175

Chapter 13: Patterns of Inheritance, pg. 189

Chapter 14: Human Inheritance, pg. 203

Chapter 15: Biotechnology, pg. 219

PRINCIPLES OF EVOLUTION

Chapter 16: Evidence of Evolution, pg. 237

Chapter 17: Processes of Evolution, pg. 257

Chapter 18: Life's Origin and Early Evolution, pg. 283

PRINCIPLES OF ECOLOGY

Chapter 26: Population Ecology, pg. 413

Chapter 27: Community Ecology, pg. 431

Chapter 28: Ecosystems, pg. 449

Chapter 29: Biosphere, pg. 463

Chapter 30: Human Effects on the Biosphere, pg. 487

TEST DATES

Midterm Test 1: Thursday September 22, 2011, Midterm Test 2: Thursday October 20, 2011 and Midterm Test 3: Thursday November 17, 2011.

FINAL EXAMINATION: TUESDAY DECEMBER 13, 2011. 8:30-10:30 AM

INSTRUCTOR

Dr. Kyauka, Pelaji: Born and raised in Kilimanjaro, Tanzania, is a graduate of the University of California at Berkeley (Ph.D., M.A.) and the University of Dar es Salaam, Dar es Salaam, Tanzania (M.Sc., B.Sc. with Education -Honors). Dr. Kyauka enjoys teaching biology, anthropology and teacher education. He is a recipient of the *Outstanding Graduate Student Instructor Award* awarded by the University of California at Berkeley for excellence in Teaching, and has conducted research in Tanzania, Ethiopia, and museums in the U.S.A, Europe and Tanzania. His scholarly work includes a 1990 human fossil study- *A new hominid from Laetoli, Tanzania. Journal of Human Evolution 19:747-750*, and a 1977 experimental pollen study- *Heterostyly in Pemphis acidula (Forst) Lythraceae) in Tanzania. Adansonia 17:139-145.*